UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,429	03/30/2001	Sanjay K. Agrawal	CISCP539	9399

26541　　7590　　04/28/2005	
RITTER, LANG & KAPLAN P.O. BOX 2448 SARATOGA, CA 95070	**EXAMINER** TANG, KAREN C

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

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	Application No.	Applicant(s)
Office Action Summary	09/823,429	AGRAWAL, SANJAY K.
	Examiner	Art Unit	
	Karen C Tang	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on <u>30 March 2001</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6-9,11,14,15,18-20,22-25,27-29,31 and 33-36* is/are pending in the application.

　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-9,11,14,15,18-20,22-25,27-29,31 and 33-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　a)☐ All　b)☐ Some *　c)☐ None of:

　　1.☐ Certified copies of the priority documents have been received.

　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　application from the International Bureau (PCT Rule 17.2(a)).

　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/10/02</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered Claims 1-35 has been renumbered as claims 14-36, respectfully.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4, 6, 7, 8, 9, 11, 14, 15, 18, 19, 20, 22, 23, 24, 25, 27, 28, 29, and 31, are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al.

hereinafter Aoki (US 6,757,255) in view of Sajadieh et al. hereinafter Sajadieh (US 6,687,223).

1. Referring Claims 1 and 23, Aoki discloses:

collecting traffic data at a queue associated with the traffic aggregate over a time interval (refer to Col 3, Lines 1-36);

calculating a burst parameter (Transfer speed, i.e, 920 pps, Col 18, Lines 1-20) for the collected traffic (determine a rate of the packet, refer to Col 4, Lines 1- 40);

calculating a burst-rate traffic profile (start time, end time, maximum segment size, packet discard rate, and packet discard even rate, refer to Fig 10) responsive to the traffic data and collected over said time interval (round trip time, refer to Col 4, Lines 1- 50) the associated rate (refer to Col 3, Lines 57-68 and Col 4, Lines 1-8);

calculating a periodic delay for the traffic profile (refer to Col 12, Lines 1- 40 and Col 18, Lines 1-20).

Aoki does not disclose worst-case delay for the traffic profile

Sajadieh discloses worst-case delay for the traffic profile, (refer to Col 1, Lines 20-35, and Col 5, Lines 10-20).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have combine Aoki and Sajadieh. The suggestion/motivation for doing so would have been that Aoki has mentioned the delay in the system, but does not expressly mentioned the worse case delay. Pinging is designed to determine a network delay at that particular time. By running the network for period time frame, the profile that one gathered for the delay can determine the worst case delay for the traffic profile.

2. Referring to Claims 2, 15, 24, and 28, Aoki discloses wherein the traffic data includes packet size and arrival time of each packet arriving at the queue during the time interval (refer to Col 3, Lines 1-36)

3. Refer to Claim 4, Aoki discloses wherein the associated rate is negotiated rate agreed to by a customer sending the traffic data (refer to Col 1, Lines 15-25).

4. Referring to Claims 6 and 18, Aoki discloses wherein the periodic delay (delay is calculated by comparing periodically of inflow and outflow of the traffic within the queue, refer to Col 17, Lines 1-40) is calculated by dividing the burst parameter (Transfer speed, i.e, 920 pps, Col 18, Lines 1-20) by an allocated bandwidth associated with the queue (refer to Col 17, Lines 4-40, 54-68 and Col 18, Lines 1-20).

Aoki does not disclose worst-case delay for the traffic profile

Sajadieh discloses worst-case delay for the traffic profile, (refer to Col 1, Lines 20-35, and Col 5, Lines 10-20).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have combine Aoki and Sajadieh. The suggestion/motivation for doing so would have been that Aoki has mentioned the delay in the system, but does not expressly mentioned the worse case delay. Pinging is designed to determine a network delay at that particular time. By running the network for period time frame, the profile that one gathered for the delay can determine the worst case delay for the traffic profile.

5. Referring to Claim 7, Aoki discloses 7 wherein the queue is allotted a share of an

output link capacity, said share exceeding the associated rate (refer to Col 1, Lines 35-

45, Col15, Lines 60-68 and Col 16 Lines 1-12).

6. Referring to Claims 9, 25, and 31 Aoki discloses periodically collecting a rate

parameter (effective bandwidth, refer to Col 8, Lines 45-55) and a burst parameter

(packet category and packet size, refer to Col 7, Lines 1-10) associated with a queue for

each of a plurality of routers (refer to Col 6, Lines 25-65).

calculating a periodic delay (delay is calculated by comparing periodically of inflow and

outflow of the traffic within the queue, refer to Col 17, Lines 1-40) associated with the

rate (refer to Col 8, Lines 45-55) and burst parameters (Transfer speed, i.e, 920 pps,

Col 18, Lines 1-20) for said each of a plurality of routers (refer to Col 6, Lines 25-68, Col

7, Lines 1-10, Col 12, Lines 1-40, Col 17, Lines 1-40, and Col 18, Lines 1-20).

Aoki does not disclose worst-case delay.

Sajadieh discloses worst-case delay for the traffic profile, (refer to Col 1, Lines 20-35,

and Col 5, Lines 10-20).

At the time the invention was made, it would have been obvious to one of ordinary skill

in the art to have combine Aoki and Sajadieh. The suggestion/motivation for doing so

would have been that Aoki has mentioned the delay in the system, but does not

expressly mentioned the worse case delay. Pinging is designed to determine a network

delay at that particular time. By running the network for period time frame, the profile

that one gathered for the delay can determine the worst case delay for the traffic profile.

and adding up the delay associated with the routers along the path (refer to Col 13,

Lines 13-63).

7. Referring to Claim 8, wherein the traffic aggregate is a class of traffic (Examiner

interprets packet data is traffic aggregate, which is a class of traffic, refer to Col 6, Lines

64-68 and Col 7, Lines 1-10).

8. Referring to Claim 11, Aoki discloses

receiving packets at an input interface (refer to Col 6, Lines 1-25).

sending each packet to one of a plurality of streams responsive to a customer

identification (refer to Col 1, Lines 15-25);

sending each packet in at least one of the plurality of streams to one of a plurality of

queues responsive to a class field, each of said plurality of queues having an

associated rate (maximum passing performance, refer to Col 1, Lines 24-35 and Fig 16

and Col 17, Lines 1-50);

monitoring an arrival time and size of said each packet at the one of the queues during

an interval time (refer to Col 6, Lines 25-67);

calculating a bust parameter (performance index which is associate with the rate of the

packets transmitted via network, refer to Col 4, Lines 35-40);

calculating a traffic profile responsive to the arrival time and size of said each packet

and the negotiated rate (refer to Col 7, Lines 1-10);

calculating a periodic delay for the traffic profile (refer to Col 12, Lines 1 –40 and Col 18,

Lines 1-20).

Aoki does not disclose worst-case delay for the traffic profile

Sajadieh discloses worst-case delay for the traffic profile, (refer to Col 1, Lines 20-35,

and Col 5, Lines 10-20).

At the time the invention was made, it would have been obvious to one of ordinary skill

in the art to have combine Aoki and Sajadieh. The suggestion/motivation for doing so

would have been that Aoki has mentioned the delay in the system, but does not

expressly mentioned the worse case delay. Pinging is designed to determine a network

delay at that particular time. By running the network for period time frame, the profile

that one gathered for the delay can determine the worst case delay for the traffic profile.

9. Referring to Claims 14 and 20, Aoki discloses:

a monitor that collects traffic data at a queue associated with the traffic aggregate over

a time interval (refer to Col 6, Lines 25-67);

a processor (refer to Col 6, Lines 13-25. It is inherit that the computer must have

processor to be able to run).

and a computer readable medium coupled to the processor and storing a computer

program comprising:

code that causes the processor to receive the traffic data (refer to Col 6, Lines 25-67,

Col 9, Lines 15-26);

code that causes the processor to calculate a burst parameter (it is inherit that the computer must have processor to run the algorithm and communicate within the network via codes, refer to Col 6, Lines 5-67, and performance index/burst parameter which is associate with the rate of the packets transmitted via network, refer to Col 4, Lines 35-40 and network can be configured/code refer to Col 15, Lines 40-67);

code that causes the processor to calculate a traffic profile responsive to the collected traffic data and the associated rate (refer to Col 6, Lines 25-68, Col 7, Lines 1-10);

and code that causes the processor to calculate a periodic worst-case delay for the traffic profile (refer to Col 7, Lines 1-10, Col 18, Lines 1-20).

10. Referring to Claims 19 and 22, Aoki discloses wherein the computer readable medium is a CD-ROM, floppy disk, flash memory, system memory hard drive, or data signal embodied in a carrier wave (refer to Col 9, Lines 15-26).

11. Referring to Claims 27 and 29, Aoki discloses

computer code that causes a processor to collect traffic data at the queue over a time interval, said traffic data having an associated negotiated (rate refer to Col 6, Lines 25-67);

computer code that causes a processor to calculate a traffic profile responsive to the collected traffic data and the associated negotiated rate (refer to Col 6, Lines 25-68, Col 7, Lines 1-10);

computer code that causes a processor to calculate a periodic worst-case delay for the

traffic profile and a allocated bandwidth associated with the queue (refer to Col 7, Lines

1-10);

and a computer readable medium storing said computer code (refer to Col 9, Lines 15-

26).

Claims 33, 34, 35, and 36 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Aoki et al. hereinafter Aoki (US 6,757,255) in view of Sajadieh

et al. hereinafter Sajadieh (US 6,687,223) in further view of Tang et al.

hereinafter Tang "Network Traffic Characterization Using Token Bucket Model".

1. Referring to Claim 33, Aoki discloses wherein calculating the burst-rate traffic profile

(start time, end time, maximum segment size, packet discard rate, and packet discard

even rate, refer to Fig 10).

Aoki does not expressly disclose utilizing a token bucket method.

Tang discloses use of token bucket method (refer to Abstract)

At the time of the invention, it would have been obvious to a person of ordinary skill in

the art to combine Aoki and Tang.

The suggestion/motivation for doing so would have been Aoki discloses the need to

avoid the congestion algorithm is carried when observed the network (refer to Col 14,

Lines 30-67 and Col 15, Lines 1-45), which is a form token bucket method is also an

algorithm to avoid the traffic congestion method.

2. Referring to Claim 34, Aoki discloses wherein the size corresponds to a maximum
burst rate (maximum congestion window size which correspond the maximum transmit
rate, Col 15, Lines 1-45).

Aoki does not expressly disclose utilizing a token bucket method.

Tang discloses use of token bucket method (refer to Abstract)

At the time of the invention, it would have been obvious to a person of ordinary skill in
the art to combine Aoki and Tang.

The suggestion/motivation for doing so would have been Aoki discloses the need to
avoid the congestion algorithm is carried when observed the network (refer to Col 14,
Lines 30-67 and Col 15, Lines 1-45), which is a form token bucket method is also an
algorithm to avoid the traffic congestion method.

3. Referring to Claim 35, Aoki discloses the associated rate (maximum passing
performance, refer to Col 1, Lines 24-35 and Fig 16 and Col 17, Lines 1-50)

Aoki does not expressly disclose utilizing a token bucket method.

Tang discloses use of token bucket method (refer to Abstract)

At the time of the invention, it would have been obvious to a person of ordinary skill in
the art to combine Aoki and Tang.

The suggestion/motivation for doing so would have been Aoki discloses the need to
avoid the congestion algorithm is carried when observed the network (refer to Col 14,

Lines 30-67 and Col 15, Lines 1-45), which is a form token bucket method is also an algorithm to avoid the traffic congestion method.

4. Referring to Claim 36, Aoki discloses wherein the burst parameter is calculated (performance index which is associate with the rate of the packets transmitted via network, refer to Col 4, Lines 35-40)

Aoki does not expressly disclose utilizing a token bucket method.

Tang discloses use of token bucket method (refer to Abstract)

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Aoki and Tang.

The suggestion/motivation for doing so would have been Aoki discloses the need to avoid the congestion algorithm is carried when observed the network (refer to Col 14, Lines 30-67 and Col 15, Lines 1-45), which is a form token bucket method is also an algorithm to avoid the traffic congestion method.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4, 6, 7, 8, 9, 11, 14, 15, 18, 19, 20, 22, 23, 24, 25, 27, 28, 29, 31, 33, 34, 35, and 36 have been considered but are moot in view of the new ground(s) of rejection, however, examiner respectfully considered applicants arguments filed on 2/18/05, but they are not persuasive.

1. In the remark, applicant argued that (1) there is no suggestion to combine the teaching of Aoki et al with Sajadieh et al to produce the claimed invention. (2) There is

no show or suggestion calculating a burst parameter, calculating a burst – rate traffic

profile, or calculating a periodic worst – case delay for the traffic profile.

2. Examiner respectfully traverse the argument:

As to point (1) In response to applicant's argument that there is no suggestion to

combine the references, the examiner recognizes that obviousness can only be

established by combining or modifying the teaching of the prior art to produce the

claimed invention where there is no teaching, suggestion, or motivation to do so found

either in the reference themselves or in the knowledge generally available to one of

ordinary skill in the art. See In re Fine, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1977)

and In re Jones, 958 F. 2d 347, 21 USPQ2d 1941 (Fed Cir. 1992). IN this case, Aoki

teaches the delay in the system, and the system detecting the delay by pinging. By

running the network for period time frame, the profile that one gathered for the delay

can determine the worst case delay for the traffic profile, which is taught in Sajadieh et

al.

As to point (2) Examiner is examining application with broadest definition

possible. Therefore, Examiner interprets the "burst parameter" as (Transfer speed,

example: 920 pps, Col 18, Lines 1-20). Examiner also interprets "Traffic Profile" as any

packet parameter that associate with the traffic within the network such as start time,

end time, maximum segment size, packet discard rate, and packet discard even rate,

refer to Fig 10. Examiner already indicate the reason of combining Aoki et al and

Sajadieh et al regarding with the worst case delay for the traffic profile, refer to point (2).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen C Tang whose telephone number is (571)272-3116. The examiner can normally be reached on M-F 7 - 3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571)272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

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